

JPRS 71831

7 September 1978

TRANSLATIONS ON TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

No. 52

**DISTRIBUTION STATEMENT A**  
Approved for Public Release  
Distribution Unlimited

20000412 161

U. S. JOINT PUBLICATIONS RESEARCH SERVICE

Reproduced From  
Best Available Copy

WORLD

WIDE

#### NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

#### PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service, Springfield, Virginia 22151. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semi-monthly by the National Technical Information Service, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Indexes to this report (by keyword, author, personal names, title and series) are available through Bell & Howell, Old Mansfield Road, Wooster, Ohio, 44691.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 71831

7 September 1978

TRANSLATIONS ON TELECOMMUNICATIONS POLICY,  
RESEARCH AND DEVELOPMENT

No. 52

CONTENTS

PAGE

WORLDWIDE AFFAIRS

WORLDWIDE AFFAIRS

PRC, FRG Technicians Meet Via Satellite TV Hookup (NCNA, 5 Aug 78) .....	1
Call Issued for Wider Nonaligned Use of Satellite Broadcasting (Various sources, various sources) .....	2
Conference Opens in Delhi 'TASS' Reports on Conference Conference Ends	
Intersputnik Meeting Opens in Ulaanbataar (Various sources, various dates) .....	4
Session Opens Meeting Accomplishments	
Turkish-Bulgarian Communications Talks Held (Ankara Domestic Service, 7, 11 Aug 78) .....	6
Talks Begin in Ankara Protocol Signed	
Soviet-Italian Broadcasting Cooperation Talks Held (IZVESTIYA, 16 Jul 78) .....	8
SRV Broadcasting Official Thanks Soviet Radio for Cooperation (Tran Lam; Moscow Radio, 24 Jul 78) .....	9

<b>BIBLIOGRAPHIC DATA SHEET</b>		1. Report No. JPRS 71831	2.	3. Recipient's Accession No.
4. Title and Subtitle TRANSLATIONS ON TELECOMMUNICATIONS POLICY, RESEARCH AND DEVELOPMENT, No. 52			5. Report Date 7 September 1978	6.
7. Author(s)			8. Performing Organization Rept. No.	
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			10. Project/Task/Work Unit No.	
			11. Contract/Grant No.	
12. Sponsoring Organization Name and Address  As above			13. Type of Report & Period Covered	
			14.	
15. Supplementary Notes				
16. Abstracts  This serial report contains translations from the world press and radio relating to worldwide political, economic and technical developments in telecommunications, computers, and satellite communications. Coverage will be worldwide with focus on France, Federal Republic of Germany, United Kingdom, Italy, Japan, the USSR, People's Republic of China, Sweden, and the Netherlands.				
17. Key Words and Document Analysis. 17a. Descriptors  Worldwide Computers Satellite Communications Electronics and Electrical Engineering Telecommunications Telemetry				
17b. Identifiers/Open-Ended Terms				
17c. COSATI Field/Group 09B, C, F, 17B, 22B				
18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22151			19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 63
			20. Security Class (This Page) UNCLASSIFIED	22. Price PCA04

CONTENTS (Continued)	Page
U.S. Ban on Computer Sales Designed To Prevent Information Exchange (TASS, 25 Jul 78) .....	11
Afghan Radio, Television Delegation Returns From USSR (Kabul Domestic Service, 17 Jul 78) .....	13
Moroccan, Iraqi News Agencies Sign Cooperation Accord (LE MATIN, 13 Aug 78) .....	14
Saudi-ROC Transportation, Communications Links Strengthened (CNA, 25 Aug 78) .....	15
Briefs	
Satellite Communications	16
Japan-GDR TV-Radio Pact	16
ASIA	
INTER-ASIAN AFFAIRS	
ASEAN Telecommunications Meeting	17
BURMA	
Satellite Telecommunication System To Be Completed Next Year (Editorial; THE WORKING PEOPLE'S DAILY, 4 Aug 78).....	18
MONGOLIA	
Briefs	
Radio Station, Relay Line	20
PEOPLE'S REPUBLIC OF CHINA	
A MFT-PT Type Composite Multi-Channel Telemetry System (Fan Hsi-lin, et al.; TI-CHIU WU-LI HSUEH-PAO, No 3, 1978) .....	21
Briefs	
Shantung-Hopeh Microwave	22
Fu-shan Automatic Telephone Service	22

CONTENTS (Continued)	Page
PHILIPPINES	
Communications System in Critical Condition (Colin Bickler; BUSINESS TIMES, 6 Jun 78) .....	23
EASTERN EUROPE	
INTERNATIONAL AFFAIRS	
Hungary Signs Contract on Telecommunications Supplies With USSR (MTI, 10 Aug 78) .....	25
BULGARIA	
Cooperation Between Communications Institute, Plant Urged (Mariya Budinova; VECHERNI NOVINI, 10 Jul 78) .....	26
CZECHOSLOVAKIA	
Briefs International Phone Connections	28
YUGOSLAVIA	
Briefs New Relay Station	29
LATIN AMERICA	
ARGENTINA	
Briefs Agreement for Microwave System	30
BRAZIL	
New Telephone Model To Accelerate Domestic Manufacture, New Technologies (Ethevaldo Siqueira; O ESTADO DE SAO PAULO, 23 Jul 78).	31
Lack of Data Delays CAPRE Decision on IBM Project (O GLOBO, 27 Jul 78) .....	34
EMBRATEL Inaugurates Direct Dialing Service to Argentina (O ESTADO DE SAO PAULO, 30 Jul 78) .....	35

CONTENTS (Continued)	Page
CAPRE Official Discloses Pressures From Multinationals (O GLOBO, 7 Aug 78) .....	36
CAPRE Supports Establishment of Computer Plant in Minas (JORNAL DO BRASIL, 2 Aug 78) .....	40
PERU	
Briefs	
Communications System Enlarged	41
SUB-SAHARAN AFRICA	
INTER-AFRICAN AFFAIRS	
BBC Reception in East, Central Africa To Be Improved (Arnold Raphael; TIMES OF ZAMBIA, 8 Aug 78) .....	42
GHANA	
Briefs	
Satellite Communications Contract	44
KENYA	
Briefs	
Kenya Satellite Station	45
MAURITANIA	
Cabinet Decides To Set Up Broadcasting, News Agency (Nouakchott Domestic Service, 21 Aug 78) .....	46
USSR	
USSR	
USSR Develops Fourth Generation Communications Computer (TASS International Service, 21 Jul 78) .....	47
Briefs	
Magadan Telephone Communications	48
Kazakh TV Tower Construction	48

CONTENTS (Continued)

Page

WESTERN EUROPE

DENMARK

- SEASAT-A To Aid in Shipping, Seabed Research  
(BERLINGSKE TIDENDE, 10 Jul 78) ..... 49

FINLAND

- TV-Telephone Information System Passes Test  
(HELSINGIN SANOMAT, 20 Jun 78) ..... 52



WORLDWIDE AFFAIRS

PRC, FRG TECHNICIANS MEET VIA SATELLITE TV HOOKEP

Peking NCNA in English 1618 GMT 5 Aug 78 OW

[Text] Nanking, 5 Aug (HSINHUA)--On the afternoon of August 3, Chinese technicians in Nanking and their counterparts in Munich had a successful "meeting" by means of the German-French Sympohnie satellite. This was the first time that China had conducted a satellite television meeting with a foreign country.

In pursuance of an agreement signed last April between the Electronic Society of China and a delegation from the Ministry of Research and Technology of the Federal Republic of Germany, the two parties evaluated the experiments in satellite communications and data transmission. The participants who conducted their discussion in English appeared on the television screens at 4:00 pm Peking time. The reception was clear and the colours were bright and sharp, presenting a well defined image. The sound achieved a high level of fidelity.

The ground station at Nanking, which was designed and manufactured in China, was the first Chinese station to join in the programme. When the delegation of the FRG Ministry of Research and Technology was in China last Paril, this ground station demonstrated its television and telephone capabilities by linking up with a fellow station at Rasting near Munich. The Nanking station performed well during this earlier demonstration.

At the August 3 "meeting," the Chinese personnel evaluated the experience conducted since early April as satisfactory and thanked the other side for their active support and cooperation in the experiments. The two sides exchanged ideas concerning satellite telecommunications technology and had friendly consultations relating to further cooperation between them.

CSO: 5500

## WORLDWIDE AFFAIRS

### CALL ISSUED FOR WIDER NONALIGNED USE OF SATELLITE BROADCASTING

#### Conference Opens in Delhi

Delhi General Overseas Service in English 1000 GMT 5 Aug 78 BK

[Text] India has called for collective efforts on the part of the nonaligned countries to break the monopoly enjoyed by the richer nations in the use of communications satellites.

Inaugurating the first meeting of the group of nonaligned countries on satellites and broadcasting in New Delhi today, the information and broadcasting minister, Mr L. K. Advani, said that the high cost and the need for high-level expertise should not deter the nonaligned nations from making a beginning in this direction. He pointed out that India was the first country in the nonaligned world to experiment with satellite broadcasting, and its results were highly encouraging.

He said India has decided to launch its own satellite system in 1980. This will facilitate broadcasting of radio and television programs in an extensive area. Also, it will help television programs in an extensive area. Also, it will help the nonaligned countries to network their programs for exchange with each other. The minister assured that India will continue to take special interest in disseminating information through the mass media organizations to other member countries.

Besides India, the countries taking part in the 3-day meeting are Algeria, Cuba, South Korea [as heard], Guyana, Nigeria and Yugoslavia. It aims at promoting mutual program exchange between each other's broadcasting organizations and exploring the possibility of direct communication through satellites.

#### TASS Reports on Conference

Moscow TASS in English 1245 GMT 6 Aug 78 LD

[Text] Delhi, 6 Aug, TASS--A three-day conference to discuss the role of communication satellites in developing television and broadcasting has

opened here attended by experts of India, Algeria, Guyana, Cuba, the Korean Democratic People's Republic and Yugoslavia.

Speaking at its opening Indian Minister of Information and Broadcasting L. K. Advani stated that the developing countries must achieve self-subsistence in the field of telecommunications via satellites. He said India decided to put its first communications satellite in terrestrial orbit in 1983 so that, through the network of ground radio and TV relay stations, direct radio and TV broadcasting could be carried out to remote rural areas.

Participants in the meeting will discuss concrete questions of cooperation in this sphere, including the matter of exchanging TV programs via satellites.

Conference Ends

Moscow TASS in English 1355 GMT 10 Aug 78 LD

[Text] Delhi, 10 Aug, TASS--A three-day conference has ended here of a group of experts on the question of establishing radio and television communication between nonaligned countries through satellites. It was attended by experts of India, Yugoslavia, the DPRK, Algeria, Nigeria, Kenya and Guyana. It was decided to prepare by common efforts concrete plans for the use of the existing communication satellites for the exchange of radio and television programs. The plan is to be tabled at the committee for telecommunications of nonaligned countries, whose session is scheduled to be held in October this year in Tanzania.

CSO: 5500

## WORLDWIDE AFFAIRS

### INTERSPUTNIK MEETING OPENS IN ULAANBATAAR

#### Session Opens

Moscow TASS in English 0812 GMT 11 Aug 78 LD

[Text] Ulaanbataar, 11 Aug, TASS--The seventh session of Intersputnik, international space communications organization, opened here today. Taking part in the session are the delegations of Bulgaria, Hungary, the German Democratic Republic, Cuba, Mongolia, Poland, Romania, the Soviet Union, the Czechoslovak Soviet [as received] Socialist Republic as well as the International Radio and Television Organization (OIRT).

The session is to discuss problems pertaining to the news coverage of the 1980 Olympic games in Moscow, exchange of political information and other problems.

#### Meeting Accomplishments

Moscow Domestic Service in Russian 1330 GMT 16 Aug 78 LD

[Text] A session of Intersputnik, the international space communications organizations, has ended its work in Ulaanbataar. Correspondent Sergey Pravdin reports from the Mongolian capital:

Taking part in the session's work were Mongolia, the USSR, Bulgaria, Cuba, and other socialist states, as well as observers from Algeria, Iraq and the International Radio and Television Organization. At the conclusion of the session the participants signed a joint communique. Gram-Ochir, first deputy of communications of the Mongolian People's Republic, and (?vice) chairman at the session, commented:

[Garam-Ochir recorded in Mongolian fading into Russian translation] First of all I would like to stress that the session's work passed in an atmosphere of friendship and businesslike cooperation and full mutual understanding. Apart from the question of television and radio relays for the Moscow Olympics, the session participants (?discussed) a plan for television

channel distribution for 1979, taking into account Cuba's requirements for the conference of nonaligned countries to be held on the Isle of Liberty next year. An accord was also reached on incorporating new earth television stations in Bulgaria and Hungary, built over the past year, into the Intersputnik system. The question of the further development of the Intersputnik system for the period 1979-1980 was also considered. (?The presence) during the session's work of observers from a number of countries, concluded Comrade Garam-Ochir, indicates the great interest in the activity of Intersputnik, particularly regarding the developing countries. [end recording]

CSO: 5500

WORLDWIDE AFFAIRS

TURKISH-BULGARIAN COMMUNICATIONS TALKS HELD

Talks Begin in Ankara

Ankara Domestic Service in Turkish 1600 GMT 7 Aug 78 TA

[Text] Turkish-Bulgarian talks on post and telecommunications have started in Ankara. The Turkish delegation at the talks is being headed by Transportation Minister Gunes Ongut and the Bulgarian delegation by Communications Minister Pando Vanchev who arrived in Ankara this morning.

In a statement before the meeting, Ongut said that the development of the telecommunication possibilities between the two countries and the importance that should be attached to communications relations between neighboring countries would be discussed at the meeting. He said that they would also review the developments that had taken place in connection with a Turkish-Bulgarian agreement signed on this matter. Ongut pointed out that communications was one of the most important elements bringing nations closer together. He added that the friendship among neighboring countries became stronger through communications.

In his speech, Bulgarian Communications Minister Pando Vanchev maintained that a communications system could not develop within the boundaries of a country and that it had to go beyond the borders of a country to develop. He stated that Bulgaria wanted to establish a joint communications system with Turkey and insure communications with Europe and the Middle East and the African countries. He added that Bulgaria was ready to make all the necessary efforts to develop the communications systems between the two countries. He said that the principles of the joint work to be conducted would be established at the meetings.

Protocol Signed

Ankara Domestic Service in Turkish 1600 GMT 11 Aug 78 TA

[Text] The protocol prepared after the official talks in Ankara between Transportation Minister Gunes Ongut and Bulgarian Communications Minister

Pando Vanchev has been signed in Istanbul with a ceremony. The protocol envisages the establishment of a technical working group connected with telex, telecommunications, transit [tranzit] news services and other joint projects.

In a speech at the ceremony, Ongut said that Turkey seeks to establish close cooperation with neighboring countries in the communications field. Ongut also said that joint efforts will be exerted to achieve speed and quality concerning the matter.

In his speech, Vanchev said that establishment of close relations between the two countries will contribute to the mutual development of the countries' economies. Vanchev added that Turkey and Bulgaria should develop their communications services.

CSO: 5500

WORLDWIDE AFFAIRS

SOVIET-ITALIAN BROADCASTING COOPERATION TALKS HELD

Moscow IZVESTIYA in Russian 16 Jul 78 Morning Edition p 3 LD

[Text] A routine working meeting between the leaders of USSR and Italian radio and television organizations took place in Moscow 11-14 July. Proceeding from the principles of expanding and deepening Soviet-Italian relations, the sides expressed themselves in favor of the further development of ties between the USSR State Committee for Television and Radio Broadcasting and Italian television and radio.

Agreement was reached on exchanging television evenings and on producing a joint seven-part color television film devoted to the great Italian composer Giuseppe Verdi.

The Italian side displayed interest in participating in live relays on Soviet opera and ballet productions.

The two delegations noted that the implementation of these projects would be an important contribution to all-European cooperation and cultural exchange in the spirit of the Helsinki act.

CSO: 5500



SRV BROADCASTING OFFICIAL THANKS SOVIET RADIO FOR COOPERATION

Moscow Radio in Vietnamese to Vietnam 1300 GMT 24 Jul 78 OW

[Statement by Tran Lam, chairman of SRV Radio and Television Commission--  
recorded; date not given]

[Text] Dear friends and comrades: In conjunction with the SRV Government and party delegation's return from Iraq's national day celebrations and its stopover in the Soviet Union, I had the pleasure of meeting the comrade leaders of the Soviet Television and Radio Commission for an exchange of views on achieving closer cooperation between the radio and television services of the two countries.

The cooperative ties between the radio and television services of the two countries dates back to 1951 when Vietnam sent its specialists to help the Soviet Radio service prepare radio programs in Vietnamese. Over the past 27 years, these ties have become closer and closer.

We highly value Moscow Radio which, during the years of anti-French resistance, enthusiastically encouraged and supported the Vietnamese people. During the anti-U.S. resistance, the radio and television services of the two countries cooperated more closely and the Soviet Union assisted Vietnam in building the first material and technical bases for radio broadcasting. Since then, Vietnam and the Soviet Union have stepped up the exchange of correspondents and specialists to conduct propaganda against imperialism and racial discrimination, support the national liberation movement in various countries and strengthen the solidarity and friendship among the world's peoples and the socialist countries.

We highly value Soviet assistance to Vietnam's radio and television service by supplying very valuable films and documents introducing the achievements of the Soviet Union and other fraternal socialist countries. The Vietnamese people have heartily enjoyed and highly appreciated Soviet films on science, technology, children, art, physical education, sports and so forth. The documentaries on Vietnam sent by our radio and television commission to the Soviet Union have greatly contributed to making the Soviet and world peoples better understand the situation in Vietnam.

After 30 years of war and after a short period of peaceful construction, Vietnam has been forced again to conduct a complicated and fierce new struggle. The Chinese leaders have encouraged the Pol Pot-Ieng Sary clique to launch armed aggression against Vietnam's border areas with the purpose of causing difficulties for Vietnam, undermining socialist construction in Vietnam and impairing Vietnam's international prestige. Moreover, with the same purpose in mind, they have concocted stories of ostracism, persecution and expulsion of Chinese residents in Vietnam. Under such a difficult circumstance, we highly appreciate the assistance given on the propaganda front by the Soviet Union, the fraternal socialist countries and the world's progressive press by exposing the truth and supporting Vietnam's just stand.

In my opinion, conditions are favorable now to further strengthen and develop the cooperative relations between the radio and television commissions of Vietnam and the Soviet Union.

At present, Vietnam, the Soviet Union and the progressive forces in the world must cooperate closely in opposing the dark designs of the imperialists, racists and reactionaries in the world as well as China's big-nation chauvinism. These forces are now impeding and undermining the socialist construction and national liberation movement in many countries.

Although our delegation's stopover in the Soviet Union is very short, we are very glad to observe that, throughout contacts with the comrade leaders in the Soviet Television and Radio Commission, Soviet support to Vietnam appears to be very sincere and enthusiastic and Soviet assistance to Vietnam in general and to the Vietnamese Radio and Television Commission in particular is very substantial.

We will endeavor to further strengthen our cooperation with our Soviet comrades through the exchange of special documents. We hope that the Soviet Union will send us documents on CEMA for study and help the Vietnamese people to more clearly understand the CEMA member countries' relations based on equality, voluntariness and mutual benefits as well as the community's strength and the economic mutual assistance among socialist countries. This will help Vietnam to develop vigorously and rapidly and to make more contributions to strengthening the socialist forces in the world.

I thank Moscow radio for giving me this opportunity today, to speak to its listeners.

CSO: 5500

U.S. BAN ON COMPUTER SALE DESIGNED TO PREVENT INFORMATION EXCHANGE

Moscow TASS in English 1743 GMT 25 Jul 78 LD

[Text] Moscow, 25 Jul, TASS--TASS political commentator Anatoliy Krasikov writes: President Carter has taken a decision directed against Soviet mass information media. That is the only way to qualify his ban on the sale of a Univac computer to TASS by Sperry Rand.

The President's decision fully agrees with the known moods of his certain advisers who do not conceal their dislike of the Soviet press and who would like very much to do harm to it by slowing down the handling of news at TASS. We can say frankly to these gentlemen: With or without a computer the Soviet press will continue to rebuff quickly and to the point all your attacks, all your efforts to distort Soviet policy and to drive a wedge in relations of friendship and cooperation between the peoples.

The United States calls itself a country of free enterprise. But where is this free enterprise, where is the freedom of trade? A prestigious firm (Sperry Rand) signs a contract for supplying the Soviet Union with civilian equipment, which is not a strategic commodity and which is not included in the list of goods banned for export from the USA. The firm sends a letter of acknowledgement to TASS confirming its intention to sell the computer, enlists the cooperation of several other suppliers, including those from third countries (Racel Milgo, T-Bar, etc.), and costly work is started.

Then the White House intervenes and the deal is cancelled.

Of course, somebody will have to compensate for the damage caused by the refusal to carry out a trade contract. But this is not the only thing that matters.

What really matters is the way each side approaches the commitments undertaken by mutual agreement within the framework of commercial relations. There is a law: Once you have signed an agreement, you must carry it out, "pacta sunt servandum." This has been the basic principle of international relations, in general, and of international economic relations, in particular. Those who violate this principle risk to lose forever the reputation of a trustworthy partner.

There is one more side to the matter. They--overseas--like to pose as champions of a "free exchange of information and ideas." At the same time, they take a decision admittedly designed to prevent such exchanges.

It is not fortuitous that one of the leaders of the American administration stated that this measure, which is directed against TASS and hence against the newspapers using TASS news service, is designed to render more difficult to the handling of the flow of news released by the Soviet news agency to the press.

By the way, TASS has agreements with many foreign news agencies, including American ones, and considers exchange of news with them a natural process, without which there can be no understanding of the policy pursued by different states.

The question arises: What do the present leaders of the USA want to promote by taking new discriminatory measures in trade? In any case, not detente or mutual understanding between the peoples.

CSO: 5500

WORLDWIDE AFFAIRS

AFGHAN RADIO, TELEVISION DELEGATION RETURNS FROM USSR

Kabul Domestic Service in Dari 1600 GMT 17 Jul 78 LD

[Text] (?Khial) Mohammad (?Tajawczi), deputy minister of radio and television, who had travelled to the USSR at the invitation of the USSR State Committee for Television and Radio Broadcasting, this afternoon returned to the homeland. On his return to Kabul International Airport, he gave an interview to the correspondent of the BAKHTAR NEWS AGENCY. He said: The delegation from the Democratic Republic of Afghanistan [DRA], during its stay in the USSR, conducted talks pertaining to expanding cooperation between the two countries in the field of radio and television. The results of these talks were positive and fruitful. In the USSR, the Afghan delegation concluded agreements connected with the expansion of bilateral cooperation in the field of radio and television and also technical cooperation with the relevant authorities in the State Committee for Television and Radio Broadcasting and with the Soviet NOVOSTI NEWS AGENCY.

The deputy minister of radio and television expressed thanks for the hospitality and warm reception accorded to the highest delegation in the USSR.

The delegation from the DRA visited radio and television projects and installations in Moscow, Tashkent and Leningrad. 'Ibdolkhaliq (?Ta'min), head of Afghan film, and Mohammad Yusuf (?Daru), technical head of radio and television, who were members of the delegation, also returned to Kabul.

At Kabul International Airport high-ranking officials from the Ministry of Radio and Television and certain members of the Soviet Embassy in Kabul were present in order to welcome the delegation.

CSO: 5500

WORLDWIDE AFFAIRS

MOROCCAN, IRAQI NEWS AGENCIES SIGN COOPERATION ACCORD

Casablanca LE MATIN in French 13 Aug 78 p 3 LD

[MAP report: "Cooperation Agreement Between the MAP Agency and the Iraqi news agency]

[Text] Rabat, 12 Aug--MAP Director Abdeljalil Fenjiro and Iraqi news agency director Mr (M'hammad Manai Yassine) signed a cooperation agreement between the two agencies at the Information Ministry this morning.

The agreement was signed in the presence of Information Minister Mohamed Larbi Khattabi, Ministry Secretary General Mustapha Kasri and Agency Union Secretary General Dr (Ferid Ayar).

The agreement will increase cooperation between the two agencies and will enable the information carried by the two agencies to be distributed in Morocco and Iraq.

Mr Larbi Khattabi made a speech in which he welcomed the agreement, which opens up new possibilities in cooperation between the two agencies and will foster understanding between the two peoples.

CSO: 5500

WORLDWIDE AFFAIRS

SAUDI-ROC TRANSPORTATION, COMMUNICATIONS LINKS STRENGTHENED

Taipei CNA in English 0231 GMT 25 Aug 78 OW

[Text] Taipei, 25 Aug (CNA)--Communications Minister Lin Chin-sheng said Thursday that the Republic of China will strengthen cooperation in the field of transportation with Saudi Arabia. In line with this policy, a seminar on digital communications systems was held here last week, Lin said.

In a separate statement, a top official of the Communications Ministry explained that cooperation in the field of transportation between the two countries covers telecommunications, highway engineering, railways, navigation and air transportation.

The official mentioned the following projects:

--In the field of telecommunications, in addition to sponsoring a seminar on digital communications system and technology, the two countries will undertake a satellite telecommunication cooperation project and exchange visits of telecommunications technicians between the two countries.

CSO: 5500

## WORLDWIDE AFFAIRS

### BRIEFS

SATELLITE COMMUNICATIONS--The Burmese delegation headed by Managing Director of the Communications Corporation U Khin Maung Tun returned to Rangoon on 30 July after attending the seminar on international satellite communications held in Washington recently. The delegation also visited Britain, Japan, India, Hong Kong and Singapore to study and discuss satellite communications, which Burma is expected to establish by February 1979 upon completion of the Intelsat project. The Intelsat project, carried out under the communications development program, will enable Burma to have a worldwide communications link the year around. [Rangoon Domestic Service in Burmese 1330 GMT 30 Jul 78 BK]

JAPAN-GDR TV-RADIO PACT--Tokyo, 13 Jul--The Japan Broadcasting Corporation (NHK) announced Thursday it has concluded an agreement with the German Democratic Republic State Broadcasting Committee in Berlin for jointly producing television films and exchanging broadcasting programs. The agreement with the East German broadcasting committee is the 19th between NHK and foreign television broadcasting bodies. [Text] [Tokyo KYODO in English 1220 GMT 13 Jul 78 OW]

CSO: 5500



## INTER-ASIAN AFFAIRS

### BRIEFS

ASEAN TELECOMMUNICATIONS MEETING--A meeting of senior ASEAN officials on telecommunications was opened in Jakarta on 24 July. The meeting, which will last until 26 July and attended by 14 senior officials from the five ASEAN member countries, will discuss the use of the Indonesian "Palapa" satellite by other ASEAN countries. The meeting is a followup of the second ASEAN meeting on post and telecommunications held in Kuala Lumpur on 30 January 1978. [Jakarta Domestic Service in Indonesian 1200 GMT 24 Jul 78 BK]

CSO: 5500



SATELLITE TELECOMMUNICATION SYSTEM TO BE COMPLETED NEXT YEAR

Rangoon THE WORKING PEOPLE'S DAILY in English 4 Aug 78 p 2

[Editorial]

[Text] Burma will be switching over to a satellite telecommunications system in 1979 when the Burma Communications Development Project is completed sometime in February.

Improving telecommunication service is vital for such services play a very important role today whether they be on a national, regional or international level.

The Burma Communications Development Project for introducing communications by satellite will come as a boon for it will enable Burma to communicate by telephone, telegraph and telex with any country or any place at any time of the day. It will contribute much to improve the telecommunications systems which serve as a facility for interaction and are essential to a nation striving to raise the living standard of her people and develop her economy to bring about a better quality of life.

Communications via satellite would mean that by only picking up the telephone a call can be made to any country. It would mean that we can be in touch with any of our missions abroad without much difficulty. This is true not only in the case of the telephone but also telex and telegraph services. While our telex service now goes through a third country, it will be greatly facilitated via the satellite in the near future.

While the Posts and Telecommunications Corporation is taking steps to improve and update the telecommunications system with other countries via satellite, it is paying no less attention to improving the internal telecommunication services. This is being done by extending the telephone system in Rangoon, installing automatic exchange equipment in Akyab, Bassein, Lashio, Mandalay, Maymyo, Meiktila, Myitkyina, Magwe, Moulmein, Prome, Pegu and Toungoo, and installing microwave systems interconnecting major centres among others.

There have no doubt been increases in the number of telephones but the telephone service is not yet entirely satisfactory from the consumer's point of view in that they are confronted with frequent frustrating inconveniences presumably due to technical reasons.

The telephone is no longer regarded as a luxury but an essential item all over the world. While introducing communications via satellite on the one hand, we hope that the authorities will strive to further improve the internal communications services to better serve the public interest. We look forward to the day when we will be in a position to establish a domestic satellite system to further improve our telecommunications systems as is being done in a number of countries.

CSO: 5500

## MONGOLIA

### BRIEFS

RADIO STATION, RELAY LINE--The building of a new radio station has been completed in Ulanbaatar. This is one of four radio stations being built in Mongolia with the participation of the Soviet Union. At the same time, a 1,900 km long radio relay line is under construction. Its completion and the commissioning of the new radio stations will help to bring radio to the most remote parts of the country. [Excerpt] [Moscow in Serbo-Croatian to Yugoslavia 1630 GMT 9 Aug 78 LD]

CSO: 5500



A MFT-PT TYPE COMPOSITE MULTI-CHANNEL TELEMETRY SYSTEM

Peking TI-CHIU WU-LI HSUEH-PAO [ACTA GEOPHYSICA SINICA] in English Vol 21,  
No 3, 1978 p 247

[Article by Fan Hsi-lin [5400 1585 2651], Li Kuo-pin [2621 0948 2430],  
Chia yu-chen [6328 3768 3791], Chou Ch'eng-ping [6650 2052 3521].].

[Text] The purpose of designing and experimenting an MFT-PT type composite multi-channel telemetry system is to transmit and observe at the same time short period and long period seismic signals and other geophysical data for a comparatively large area (100-200 kms radius).

It is a combination of the pulse amplitude modulation and frequency modulation types. The design of the system consists of some special features, such as the "Waiting Type" multi-phase multivibrator, singletube monostable circuit. When this system is used together with a computer and magnetic tape recorder, it is possible to process seismic data very quickly.

If audio frequency is used, then by means of a telecommunication line, seismic signals can be transmitted to thousands of kilometers away. When radio frequency receivers and transmitters are used the system can be turned to be a portable telemetered seismic network.

CSO: 5500

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

SHANTUNG-HOPEH MICROWAVE--The project of building a 960-channel microwave system between Tsinan in Shantung Province and Shihchiachuang in Hopeh Province was successfully completed, and the network was put into operation on 23 July. It has begun to relay the television programming of the Peking station and others. The project extends 315 kilometers. There are eight relay stations in the network. Construction of the project began in October 1977, and on 26 December the circuit was opened on a trial basis. After repeated trials and readjustments over 6 months, the project has been fully put into operation, thus enabling Shantung Province to reach a new level in relaying television, telephone, telegraph and facsimile transmissions. At the meeting to celebrate the formal opening of the 960-channel microwave network between Tsinan in Shantung Province and Shihchiachuang in Hopeh Province, Vice Chairman of the Shantung Provincial Revolutionary Committee Chu Pen-cheng delivered a congratulatory speech. [Tsinan Shantung Provincial Service in Mandarin 1130 GMT 28 Jul 78 SK]

FU-SHAN AUTOMATIC TELEPHONE SERVICE--In mid-May this year, Kwangtung's Fu-shan Municipality began automatic telephone services in urban areas and all suburban rural people's communes, production brigades and production teams. Up to then, Fu-shan Municipality had carried out the "four modernizations" of the postal and telecommunication services: the automation of telephones, the use of the long-distance telephone system, the use of telephotography and the motorized delivery of telegrams. Recently, Fu-shan Municipality has installed and used an automatic telephone system made in China, with 2,000 two-way switching lines. Since February this year, with the assistance of the installation team from the provincial postal and telecommunications office, the workers of the Fu-shan Municipal Postal and Telecommunications Office have readjusted, repaired and installed circuit lines, scientifically compiled telephone numbers and trained operators and maintenance personnel to use the new equipment. In mid-May, the new equipment was completely installed and put into operation. [Text] [Hong Kong CHUNG-KUO HSIN-WEN in Chinese 4 Jul 78 p 7] 9039

CSO: 5500



## COMMUNICATIONS SYSTEM IN CRITICAL CONDITION

Kuala Lumpur BUSINESS TIMES in English 6 Jun 78 p 11

[Article by Colin Bickler in Manila]

[Text]

THE sprawling archipelago of the Philippines is facing a crisis in its internal communications systems amid a growing public outcry.

The postal and telegraph service and the telephone system are not keeping pace with the country's expanding economy.

The result is serious bottlenecks and frustration on the part of the users of these services.

It has reached the stage where it is often faster to make an overseas telephone call or send a foreign cable than it is to do these things domestically.

The communications crisis is producing spin-off industries such as private couriers who deliver letters personally, though not always more efficiently than the regular postal service.

Several telegraphic companies operating in the Philippines seem to defy the adage that competition serves the customer best.

Recently the father of a locally-based journalist turned up to wish his daughter-in-law a happy birthday three days ahead of his greetings telegram.

A Press telegram dispatched from Zamboanga city, 525 miles (840 kms) from Manila, can take up to 48 hours to be delivered in the capital.

Telephoning from there to Manila is like a lottery. Sometimes you get through immediately and at other times you can wait all day without being connected.

Sending a letter can be a hit or miss affair. The other day a letter to the editor of a Manila newspaper, — it did not

say how it was delivered — described the personal experience of a man who sent two letters and a telegram from his provincial home to his relatives in Manila to tell them of his coming visit.

One letter went ordinary mail and the other

express. He arrived before all three. The express letter came after the ordinary mail, he wrote.

An airmailed package of budget papers posted from Hong Kong for a Manila office arrived long after the budget had been worked out and couriered back by private means.

The airmailed April 21 edition of a magazine posted in Hong Kong arrived here two weeks after the May 12 edition.

Some mail never arrives at all.

Mr Antonio Z. de Guzman, president of the Young Postal Workers, is particularly sensitive about the accusations of bad postal delivery. He blames it partly on low pay — apparently on the theory of relativity between the speed of delivery and the amount a postal worker gets.

"The postal service has been bitterly criticised for inefficiency, delay in the delivery of mail matters and mail pilferages," he wrote to the Daily Express newspaper this month.

"While some of these accusations may be true, the public, however,

may be informed that one of the contributory factors to this is caused by the unrealistic salary scale of postal employees," he added.

He claims about 70 per cent of postal workers get around 500 pesos (US\$68.50) a month. This is a little less than the average daily paid worker — who can make more than US\$70 if he works 30 days in a month — but about double the official legal minimum for daily workers.

Whatever the reason, the government-guided newspapers have also been asking serious questions about the mail delivery — a sure sign that a lot of people are getting fed up.

The Times journal cited a departmental study showing two basic reasons for slow mail. One was double-handling, in which all ordinary and air mail is sorted out by

hand and bundled and labelled for the different destinations — which may only be across town.

At each landing point they are re-sorted and in the central post office, which handles up to two million pieces a day, there are not enough peo-

ple, mechanical sorting devices or pigeon holes to sort the letters. But the study also says one automatic sorter is idle half the time.

Even if the letter or package gets out of that morass, the mail is sometimes a victim of private contractors or Philippines Airlines, whose schedules are erratic.

The post office is also plagued by pilferage — a profitable pastime with more than a million Filipinos overseas. Many thousands of them send home pay cheques or dollar notes from the United States, Saudi Arabia, Iran, Britain, Australia and Canada. So do the many hundreds of Filipinos working on merchant vessels.

According to the same Times journal study, the post office claims "pilferage of the mails will continue as long as the

mail is handled by human hands."

Some pilferage may occur while mail bags are travelling on open decks of the ferries that connect the main body of the country's 7,100 islands, which could also be a reason for the bad condition of some mails on delivery.

The pilferers inside the post office are ingenious — and apparently more ready to rely on mail deliveries than some non-post office workers. One method used by some of the more than 100 postal workers sacked for dishonesty in the past two years was for a postal worker to paste his own address over that of the original addressee.

That way it may get delivered — eventually — to the postal workers' home.

Adding to the temptation are the touts who hang around the main post office offering to buy U.S. dollars.

The telephone service — largely in the hands of private companies — has different problems. It just cannot keep up with demand for new lines.

Its servicing is particularly stretched in burgeoning, below-sea-level Manila to maintain them, especially during the typhoon and flood seasons.

The fast-expanding Philippines Long Distance Telephone Company, the biggest of the operators, is buying new equipment and streamlining its service but demand outstrips supply.

Linesmen have been known to steal connections from an old subscriber to connect a new one for a fee. — Reuter.

INTERNATIONAL AFFAIRS

HUNGARY SIGNS CONTRACT ON TELECOMMUNICATIONS SUPPLIES WITH USSR

Budapest MTI in English 1743 GMT 10 Aug 78 LD

[Text] Budapest, 10 Aug (MTI)--Representatives of the Hungarian Budavox telecommunication company and of the Soviet Foreign Trade Union Maspriborintorg signed an important contract on Thursday in Moscow. It provides for the Hungarian delivery of complex technologic telecommunication system for Soviet oil pipelines worth 11 million rubles. Budavox starts the supply this year. It provides in 1978 complex telecommunications systems for a 900 km long oil transmission line. The contract constitutes a part of the long-range Hungarian-Soviet oil industrial cooperation. The Hungarian equipment will be laid on 1,000 km long sections in 1979 and 1980. Under the agreement concluded between the two countries the Soviet side is to supply crude oil in return for the Budavox's equipment. On the Hungarian part the contract was signed by Jozsef Benko, deputy general manager of Budavox, and on the Soviet part by Mihail Jefremov, the vice-president of Maspriborintorg. Present at the event of signing was also V. Sokolov, the Soviet Union's deputy minister for oil industry.

CSO: 5500



COOPERATION BETWEEN COMMUNICATIONS INSTITUTE, PLANT URGED

Sofia VECHERNI NOVINI in Bulgarian 10 Jul 78 p 2

[Article by Mariya Budinova: "An Integrated Counterplan"]

[Text] It was here that, for the first time, following the example of the Soviet workers, the idea of joint work between the Plant for Telephone and Telegraph Equipment, and the Institute for the Communications Industry was materialized within an integrated counterplan. This was demanded by the production process which faced the accelerated mastering of the production of licensed goods. That is how a temporary collective consisting of plant and institute specialists was set up in 1974-1975. Engineers went to the shops and, together with the workers, created the test series, jointly "giving life" to the new items.

Based on long experience, this year the two collectives drafted a coordination program for comprehensive scientific services to production. The modification of the "plant-institute" initiative pursues the same objective: coordination of basic tasks for the accelerated installation of new direct dialing telephone exchanges based on the "crosspoint" license, for export to the USSR, cooperation with the GDR, and successful implementation of the general plan for the automation of telephone communications in our country and of bilateral contracts signed with a number of countries. In accordance with the general plan for the use of electronics in communications equipment, the production of direct dialing telephone exchanges with micro-processor control is planned. This will contribute to the saving of raw and other materials. The coordination program also includes the task of replacing imported with Bulgarian elements.

The development of the new goods can not be effective without experienced and knowledgeable workers, technologists, and designers. Both collectives are interested in such people. The coordination program pays serious attention to the subject of "technical policy." Well trained and informed institute specialists will act as lecturers, heading special courses for upgrading skills and interpret to the workers the nature of the new equipment.

The outlines of the program have been delineated. However, the program has still not been signed by the two collectives. The set of problems lies in the deadlines issued by the Ministry of Electronics and Electrical Engineering. They have not been synchronized in time. The result is that the production of new commodities is scheduled to begin before completing the technical documentation. The contradiction was detected. The party managements of the plant and the institute sought possibilities for its best possible solution. A study will be made of the conditions which would result in reducing deadlines while specialists will adopt a counterplan and deliver the documents at least two months ahead of schedule.

Both the Resprom State Economic Trust and the Ministry of Electronics and Electrical Engineering must make their contribution. The drafting of the 1979 coordination program must begin now. Representatives of the institute and the plant must actively participate in the drafting of the institute's plan as they have participated in the formulation of the engineering project, for this plan is the basis of the program.

The question of providing scientific services in organizing the work of the plant has not been resolved in the program. Yet, this year the collective must raise the load of the basic equipment by 10 percent, reduce material outlays by 5 percent, and increase labor productivity. The help of the institute's specialists in the implementation of such tasks in the course of drafting the project for improving the socialist organization of labor at the plant has not been clarified. Yet, unity of action, combining the activities of the institute with production problems alone could make effective the contribution of both collectives to the implementation of the decisions of the National Party Conference.

5003

CSO: 5500

## CZECHOSLOVAKIA

### BRIEFS

INTERNATIONAL PHONE CONNECTIONS--Telephone subscribers in the northern Bohemian town of Most can now directly dial Belgium, Denmark, Finland, France, Ireland, Yugoslavia, Luxembourg, Hungary, the GDR, the FRG, the Netherlands, Norway, Sweden, Switzerland and Great Britain. [Prague RUDE PRAVO in Czech 1 Aug 78 p 2 AU]

CSO: 5500





## BRIEFS

NEW RELAY STATION--Sarajevo--A new relay station, which will be officially commissioned on Trovrh on Friday 28 July, will completely solve the problem of radio and television reception in the municipalities of Gorazde, Rogatica, Foca, Visegrad, Rudo, Cajnice and Sokolac and other municipalities in eastern Bosnia and the upper Drina Region. The new relay station, the seventh of its kind in Bosnia Hercegovina, cost 44.1 million dinars to build and is equipped with powerful transmitters designed to relay two radio and two television programs. Beginning tomorrow, when it will start work on an experimental basis, the station will relay the first television program on Channel 9 and the second on Channel 2 and the first VHF radio program on 90.3 mHz and the second on 99.5 mHz. The quality of the television picture and the audibility of radio programs have until now been very poor in eastern Bosnia. This is illustrated by the fact that there are only 15,000 television sets. With the completion of the relay station on Trovrh and the completion of the station on Mt Majevica in October this year television and radio programs will be available over 90 percent of the territory of Bosnia-Hercegovina. [Belgrade TANJUG Domestic Service in Serbo-Croatian 1446 GMT 25 Jul 78 LD]

CSO: 5500



## ARGENTINA

### BRIEFS

AGREEMENT FOR MICROWAVE SYSTEM--The Mendoza government has signed an agreement with the National Communications Secretariat and the National Telecommunications Company for the construction of a microwave trunk circuit with 960 channels and 3 beams--for television, telephone and for reserve--all of them bidirectional, between Mendoza and General Alvear. [Buenos Aires Domestic Service in Spanish 1030 GMT 25 Jul 78 PY]

CSO: 5500



## BRAZIL

### NEW TELEPHONE MODEL TO ACCELERATE DOMESTIC MANUFACTURE, NEW TECHNOLOGIES

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 23 Jul 78 p 48

[Article by Ethevaldo Siqueira]

/Text/ With the Brazilian telephone model produced by IGB-Control /Expansion unknown/, a Gradient Group enterprise, the development of a domestic telecommunications technology is entering a new stage. After 3 years of studying, developing and perfecting what is universally most advanced in the field of technology and design, Control has completed the production of a telephone model which embodies the Prevailing telephone aspirations of the past 80 years.

Within the next few days, TELEBRAS /Brazilian Telecommunications Corporation/ will test the performance, as well as the workmanship, of the first 500 new model telephones. Within 2 or 3 years, Brazil will install only this model, which makes use of electronic memory and keyboard instead of the traditional dial system.

The day before yesterday, Eugenio Staub, Gradient president, presented the first new telephones to Minister Quandt de Oliveira and to the TELEBRAS president, Alencastro e Silva. On this occasion, the entrepreneur was informed that "IGB-Control will be the sole domestic industry responsible for producing the new model." Actually, TELEBRAS, by virtue of its contract, is the owner of the rights and "know-how" of the telephone produced by the Gradient Group.

The Gradient telephone was designed with the main objective of giving the country a truly electronic telephone rather than an electro-mechanical one, thus opening up the market and making the electronic component-parts industry practicable. This electronics project necessitates a world survey of trends and standards, although Brazil is still going to continue for a few more years to use some traditional component parts such as the transmitter and receiver cartridges recently standardized by TELEBRAS.

The replacement of the dial by a keyboard is not merely a matter of sophisticated design, but rather a necessity in view of the projected use of

new equipment both for the conventional telephone exchanges and for the coming CPA /stored program directed/ telephone exchanges.

The Brazilian telephone model-78 design already anticipated the immediate use of recalling or redialing. Thus, when the telephone dialed is busy, it is sufficient to put the receiver back on the hook. Minutes later, pick up the receiver and press down the lower right telephone key (similar to a square grid or the sign indicating a sharp note in music). The telephone number of the last person dialed will always be automatically recalled. To call it again (redial) it is sufficient to press down this key: the telephone will give off the electronic sounds corresponding to the desired number.

As a rule, in operation in Brazil today are electro-mechanical telephone exchanges which receive two kinds of dial signals: the decimal and the multifrequency. In the first, each time the dial is pressed down there is a corresponding continuous-current interruption which sets the telephone exchange mechanism in motion in search of a circuit which is routed to the telephone dialed. In the multifrequency type, the telephone exchange receives the different signal frequencies and upon the completion of the dialing, immediately routes the dialed surge of current through the correct line.

The new telephone has two kinds of keyboards at its disposal, one for each type of dialing signal or telephone exchange. Thus, all the existing telephone exchanges today will be able to receive new keyboard-equipped telephones when the standardized telephones are installed.

This keyboard will also make possible the connection of a minicalculator using the telephone system's electric energy, by means of visor and micro-processor which will be installed in the space already provided for in the new model. Another possibility will be including the electronic memory in the shortened keyboard. In this way, the numbers most used by subscribers can be reduced to only two numbers. Even in the case of direct international calls or by national DDD /Direct Distance Dialing/, up to 14 numbers (and in the future, up to 21) can be memorized and cut down to only two digits.

According to Nelson Bates, director of IGB-Control, the development of the new telephone will make the Brazilian microcomponent-parts market viable, offer an advanced technological option and even have the advantage of saving on foreign exchange and royalties. Bastos highlights four characteristics of the Gradient telephone: 1) mechanical and electronic concept which makes possible future evolution and modernization because it was planned at the very time of universal change in design and technology; 2) it gives the telephone the greatest possible nationalization rating during an early stage; 3) it is a very modern looking telephone but not exaggeratedly so, recognizable, and easily fits in with any setting; 4) it allows for the adjustment to different musical tones (electronic bells) which make it easy to recognize the calls of different telephones, such as those used on an executive's desk.

No one anticipates any possible negative reaction from multinationals, nor even from those that now manufacture conventional models, on the adoption by TELEBRAS of a totally Brazilian telephone model. The standardization of telephones through the development of an advanced model has long been known to be every sector's goal since the Ministry of Communication Regulation 312 in 1975.

8870

CSO: 5500

BRAZIL

# LACK OF DATA DELAYS CAPRE DECISION ON IBM PROJECT

Rio de Janeiro O GLOBO in Portuguese 27 Jul 78 p 24

/Text/ Brasilia--The Coordinating Committee for Electronic Processing Activities (Capre) meets today in Rio to make an intensive study of a collection of IBM, Burroughs and Honeywell Bull projects, but will not yet vote on the proposal to manufacture a new "small" IBM computer, because the company has not yet submitted the data required by Capre for its precise description.

This will, however, be the second time that all the committee members will have occasion to discuss the IBM proposal without their technical group's having succeeded in getting all the details together for a well-substantiated decision on the small-business computer project.

For this reason, the main topic concerning IBM interests which Capre is to discuss today does not touch on its new project, but on an old requirement the committee had made of them: the submission of a "commitment date" for the manufacture of computer 148.

Capre's meeting today will be final for the decision on the Honeywell Bull proposal for the manufacture of a minisystem model which although it should be of great importance to the Brazilian market--particularly useful in promoting bank services--will compete with domestic minicomputers.

For the approval of the Honeywell project, the company will undoubtedly have to agree to restrict its model's performance to a limited range of configurations. Otherwise Capre cannot consider granting priority to the project.

8870  
CSO: 5500



BRAZIL

# EMBRATEL INAUGURATES DIRECT DIALING SERVICE TO ARGENTINA

Sao Paulo O ESTADO DE SAC PAULO in Portuguese 30 Jul 78 p 33

[Text] At 1500 hours next Tuesday EMBRATEL [Brazilian Telecommunications Company] will inaugurate international direct dialing [DDI] to Argentina, the country with which Brazil has the fourth largest volume of bilateral traffic (an annual total of 450,000 telephone calls). The inaugural ceremonies will be held in the office of Haroldo Correa de Mattos, president of EMBRATEL, and will be attended by Argentine Ambassador Oscar Hector Camillion, who will place a call to Buenos Aires.

This will be the first time for DDI operations to be effected by landline, via a trunk comprising 1,800 circuits that was inaugurated last June at Foz do Iguacu.

According to Correa de Mattos, activation of the DDI service to Argentina is part of a long-standing EMBRATEL project for interconnecting Brazil with neighboring countries, and inauguration of the interconnection with Paraguay is scheduled for October. The EMBRATEL president also stated that a readjustment of the rates for telephone calls to Argentina will be announced within the next few days.

To place a call to Argentina, users in the 283 Brazilian cities that offer the DDI service must dial the area code 0054 followed by the city code (Buenos Aires has the number 1, Mar del Plata 23, Rosario 41, Cordoba 51 and Mendoza 61), after which they will dial the number of the telephone they are calling. Calls for Argentina--which during Copa [meaning unknown] took approximately 3 hours--will go through in 20 seconds.

The international direct-dialing service currently extends to a total of 30 countries on four continents (Africa has not yet been connected).

10992  
CSO: 5500

BRAZIL

#### CAPRE OFFICIAL DISCLOSES PRESSURES FROM MULTINATIONALS

Rio de Janeiro O GLOBO in Portuguese 7 Aug 78 p 22

[Text] Brasilia (O GLOBO)--"The relationship between the Brazilian economy and the multinationals--primarily the American multinationals--has in recent years passed through various stages that range from indifference to dialog."

This observation was made to O GLOBO by Ricardo Saur, executive secretary of the Commission for the Coordination of Electronic Data-Processing Activities (CAPRE), in an analysis of the position adopted by the government and the Brazilian market in the area of data processing vis-a-vis foreign business ventures in that area.

In the opinion of CAPRE's executive secretary, the stage of "indifference" was characterized by the unrestricted take-over of the Brazilian computer market in the absence of any criteria governing the development of this situation.

When he was asked concerning the change that has taken place in the Brazilian Government's policy of welcoming foreign capital into the data-processing sector, Ricardo Saur said that foreign companies continue to be welcome but with one difference: there are now well-defined rules to govern occupation of the Brazilian market.

CAPRE's executive secretary disclosed that the first incident involving a Brazilian company and a foreign firm in the computer field occurred several years ago when COBRA (Brazilian Computers and Systems, Inc) attempted to negotiate the transfer of technology from the second largest minicomputer manufacturing company in the world, the American Data General corporation.

Data General initially manifested great interest in this proposal but stipulated a number of restrictions--during preparation of the contract--with respect to the transfer of technology: restrictions which in the opinion of the COBRA management would make it impossible to achieve the principal objective of the Brazilian company, namely to produce a Brazilian minicomputer under conditions allowing an increasing degree of nationalization.

In the face of Data General's inflexibility, negotiations were broken off and an effort was made to find a new partner for COBRA. A smaller company--SYCOR [expansion unknown]--was more flexible in respect to the clauses covering the sale and transfer of technology, and the partnership was formed.

Data General's reaction was immediate: it made representations to the U.S. State Department in an attempt to prevent SYCOR from openly transferring minicomputer-manufacturing technology to a Brazilian company. Data General further alleged that COBRA could in the future be transformed into a competitor of the U.S. companies; that it set an extremely bad example for companies of other underdeveloped countries to follow; and that it was illogical for a U.S. firm to operate in other markets outside the established system for sales of the finished product in those areas.

In attempting to prevent COBRA from acquiring minicomputer technology, Data General would also be making it impossible for Brazil ever to enter the computer manufacturing field, inasmuch as the other sectors (the manufacture of medium- and large-scale systems) of the data-processing industry were already in the hands of foreign companies.

COBRA's proposal, however, was "too good" for SYCOR to turn down, and Data General itself would have accepted it if that company had been a little more receptive to the idea of the inevitable awakening of interest in the computer field on the part of countries--such as Brazil--that are currently in the stage of industrial development.

Today it must be acknowledged that Data General's fears were not entirely unfounded. COBRA now has almost the same number of employees as SYCOR: approximately 750, of whom 500 are college-trained and 200 have done graduate work. COBRA's plans call for total sales of \$100 million annually--almost equal to those of SYCOR.

The advent of a Brazilian computer firm ultimately brought about a confrontation with another large U.S. company: IBM, the world's largest manufacturer of computers of all sizes.

Although the potential Brazilian market for minicomputers represented only 1 percent of IBM's world sales, it was a market that was growing at a 30 percent rate domestically and perhaps at an even higher rate internationally.

This confrontation between a powerful multinational corporation and a small company one of whose shareholders was the state evolved into a political problem of larger scope. The matter produced noteworthy repercussions in the United States, where the larger organs of economic journalism discussed it to some extent.

In its issue of 19 February of this year the New York TIMES discussed the subject at length in an article entitled, "Brazil Declares Its Independence in the Computer Field." The article once again focused attention on the problem, and in particular on the position of IBM.

Despite the fact that IBM has in its employ a number of people who have left important positions in the U.S. Government, and that the U.S. Government employs former members of the IBM board of directors such as Secretary of State Cyrus Vance himself, this period was characterized by a measure of resistance to external pressures. Brazil had broken its military agreement with the United States and reaffirmed its objective of carrying out its own atomic program.

Realizing that it would not be able to impose its will solely by means of its strength in the market, the IBM tried to establish its "Minicomputer/32" system in competition with 15 other manufacturers. The formation of joint ventures (partnerships) between Brazilian companies and companies of other nationalities (one French, one Japanese and one German company, respectively LCGABAX [expansion unknown], Fujitsu and Nixdorf) prevailed, however. IBM lost because it refused to meet one of the principal criteria for selection, namely the formation of a partnership in association with Brazilian capital: something that IBM has never done in any of the 126 countries in which it operates. Once again a U.S. company had failed to understand that captive markets are not necessarily eternal.

One year later the executive secretary of CAPRE declared: "We passed through the stage of indifference, and have just now emerged from the stage of controversy and entered the stage of dialog." This representative of the governmental entity that operates in the computer sector had just left a 2-hour meeting with the management of IBM's Brazilian branch office.

Moreover, IBM itself had already taken the initiative and invited Brazilian authorities to visit its installations in the United States--an invitation which was accepted by CAPRE's president Elcio Costa Couto and its executive secretary Ricardo Saur.

The visit was not consummated in an atmosphere of complete fraternization, however, inasmuch as IBM had been attempting--until recently--to sell a total of more than 300 minicomputers in Brazil. The company argued that the orders had been recorded before CAPRE selected the three new occupants of the market reserve.

In the view of some members of the CAPRE organization, however, to approve this new IBM demand would have the effect of impeding implementation of the plans that the government had just established for the minicomputer market: plans which were regarded as essential to the development of a Brazilian computer industry. Moreover, the orders placed for the importation of IBM parts and components took up almost two-thirds of the annual quota set by the CDE [Economic Development Council] for the electronics field.

Agreement by IBM to engage in dialog did not prevent a new controversy from arising, however. This multinational company took the occasion to put forward a proposal to which CAPRE's prohibitions did not readily apply: it wanted to manufacture, in Brazil, a computer which according to Wando Borges,

president of DIGIBRAS [expansion unknown], "is 'mini' in its simpler configurations but medium-scale in its more complex configurations."

The president of DIGIBRAS also denounced "this new attack by IBM against the development of a Brazilian computer industry." CAPRE itself, through its president Elcio Costa Couto, had already declared that the government would not relinquish the market reserve created for the "minis" that had already been selected for the domestic market.

At the present moment CAPRE and IBM are "engaging in dialog" with a view to reaching an agreement. On the CAPRE side it is hoped that IBM will reformulate its proposal in such a way that its computer will not take business away from the Brazilian companies by virtue of the adaptation of this new IBM product to enable it to perform tasks intended solely for performance by the "medium-scale" systems. In response, the IBM has already reaffirmed that its new computer is a "medium-scale" machine. The conclusion of this current stage in computer affairs is scheduled for the forthcoming meetings of CAPRE, at which time that institution's board of directors, meeting in plenary session, will vote either for or against the IBM proposal. In the event the multinational company satisfies CAPRE's requirements, it will have initiated a new stage in the history of the relationship between the Brazilian economy and the United States in the computer field: the stage of "accommodation," as Ricardo Saur, executive secretary of CAPRE, has called it.

10992

CSO: 5500

BRAZIL

# CAPRE SUPPORTS ESTABLISHMENT OF COMPUTER PLANT IN MINAS

Rio de Janeiro JORNAL DO BRASIL in Portuguese 2 Aug 78 p 19

[Text] Belo Horizonte--CAPRE [Commission for the Coordination of Electronic Data-Processing Activities] has now decided to support the establishment of a factory for the manufacture of medium-scale computers in Minas Gerais, according to a report submitted by its president, Elcio Costa Couto, to the Minas Gerais state government. Plans call for the undertaking to be carried out as a "joint venture" with the participation of Honeywell Bull, BRASILINVEST [expansion unknown] and a Brazilian partner--possibly the Central Brazil Telephone Company.

If participation by the Central Brazil Telephone Company is consummated, the computer factory would be built in Uberaba with an initial investment of approximately \$50 million, although the line of computers to be manufactured has not yet been decided upon. This information was disclosed by Secretary of Industry and Commerce Marcio Garcia Vilela, who has been in contact with the president of CAPRE, Elcio Costa Couto. Ever since CAPRE initiated the process of selecting the firms who would manufacture minicomputers in Brazil, the Honeywell Bull group--backed by French and U.S. capital--has been trying to obtain support for the establishment of a medium-scale-computer industry by seeking a Brazilian partner or partners who would hold a controlling interest in the enterprise.

The Central Brazil Telephone Company enjoys a favored position, inasmuch as under the current federal policy for the telecommunications sector it is unable to expand its operations and is therefore accumulating funds that will be available for other types of investment.

10992

CSO: 5500

PERU

BRIEFS

COMMUNICATIONS SYSTEM ENLARGED--The National Telecommunications Enterprise of Peru, ENTEPERU, has signed an agreement with the Japanese enterprise, MISUI corporation limited, Tokyo, for the establishment of a radio communications system from Iquitos, Sara, Pozo and Pulcalpa with Lima, and Cerro Pasco with Puclapa. [Lima Domestic Service in Spanish 1200 GMT 18 Aug 78 PY]

CSO: 5500

## INTER-AFRICAN AFFAIRS

### BBC RECEPTION IN EAST, CENTRAL AFRICA TO BE IMPROVED

Lusaka TIMES OF ZAMBIA in English 8 Aug 78 p 2

[Article by Arnold Raphael]

[Text] London, Mon--BBC reception in East and Central Africa will be dramatically improved within the next two or three years.

The go-ahead has been given for streamlining the transmitter to serve the region. The question is whether it should be sited in Botswana, Lesotho or the Seychelles.

BBC survey team has just returned from these countries. Botswana is the more likely choice assuming of course that the Seretse Khama government approves. The money for the transmitter will come from the K20 million the British government has just allocated for the improvement of the BBC's external services reception. Nowhere does it need greater improvement than in East Africa. The snap-crackle-pop of the BBC world and African services has lost countless listeners to the German, American, Russian and other international networks broadcasting in English.

The BBC reception is so poor that apart from the news and current affairs programmes such as Focus on Africa, local audiences have little option but to tune into local and other external services for their entertainment.

For years the BBC has badgered Whitehall for a transmitter to replace the one in Somalia which Britain was forced to give up after independence. The answer was always that there was no money available. But after much politicking between Whitehall and Broadcasting House, the government has given way and funds for improved reception were indicated in the recent white paper on British representation overseas.

It is understood that negotiations for a new transmitter for east and Central Africa have gone much further than the white paper would lead one to believe. But transmitters take time to construct and it will take up to three years before there is any real improvement in the BBC signal in the region.



Until then it will continue to be served by the BBC Assencion Islands transmitter. It gives the BBC a clear lead over other foreign broadcasting systems in West Africa but has done little to improve reception in east and Central Africa since it replaced the Cyprus booster station some months ago.

CSO: 5500

## GHANA

### BRIEFS

SATELLITE COMMUNICATIONS CONTRACT--The Export Development Corporation of Canada (EDC) has granted a \$5.7m. (about £8m.) to the Posts and Telecommunications Corporation to support a contract awarded to a Canadian firm to supply and install an earth satellite telecommunications system in Ghana. Mr John MacDonald, chairman of the EDC, said Spar Technology Ltd. of Montreal, a division of Spar Aerospace Products of Toronto, will build a standard intelsat earth satellite and an international switching centre in Accra. EDC is a federally-owned commercial enterprise that provides loans to support exports sales, export credits and surety insurance, foreign investment guarantees and other financial facilities to Canadian exporters to enable them to compete internationally. [Text] [London WEST AFRICA in English 21 Aug 78 p 1666]

CSO: 5500

KENYA

BRIEFS

KENYA SATELLITE STATION--Power and Communications Minister Daniel Mutinda, today launched a construction work of Kenya's second satellite earth station next to the old one at Longonot in the Rift Valley. The construction of a new satellite earth station has been necessary because the old one is nearly completing its lifetime of 10 years. The new station will take about 18 months to construct and will cost about 35 million shillings. It is being built by an Italian company. [Nairobi Domestic Service in English 1600 GMT 26 Jul 78 LD]

CSO: 5500

MAURITANIA

CABINET DECIDES TO SET UP BROADCASTING, NEWS AGENCY

Nouakchott Domestic Service in Arabic 2030 GMT 21 Aug 78 LD

[Excerpts] Mohamed Yehdi Ould Breidelleil, official government spokesman and minister of culture and information, briefed newsmen a short while ago about the results of the recent cabinet meeting.

The government has approved a statement presented by the minister of culture and information regarding the reorganization of the information sector. Consequently, the cabinet has ratified the following decisions: A decision stipulating the setting-up of a general establishment which shall be called the Mauritanian Broadcasting [as heard]; also a decision stipulating the setting-up of a general establishment which shall be called the Mauritanian News Agency.

Finally, the cabinet approved the following appointments: (?Mohamed Lamin Ould Moulay Zein) as assistant governor of the Nouakchott region for administrative affairs; (?Sidi Ould Ahmed Dey) as assistant governor of the Nouakchott region for economic affairs; Sidi Ould Cheick as director of the Mauritanian News Agency; and (?Abdoulla Ould Da'a) as head of the National Establishment for Cinema.

CSO: 5500

USSR

#### USSR DEVELOPS FOURTH GENERATION COMMUNICATIONS COMPUTER

Moscow TASS International Service in Russian 1433 GMT 21 Jul 78 LD

["Successes of Soviet Electronics"--TASS headline]

[Text] Moscow--The Soviet Union has mastered the production of Elbrus-2 universal multiprocessor fourth generation computers, which have an overall productivity of over 100 million operations a second and substantially surpass the most modern high productivity universal machines of foreign firms, such as the (?B-7700/4), the Cyber-176 (Control Data), the Univac-1100 family, the IBM 370/195 and even the Grey-1 model with a productivity of 50 million operations a second.

The Elbrus-2 is made on the basis of large, highly integrated circuits. The problems of creating a superfast operating element base, precision multi-layer high-frequency plates, group junction formations and original cooling systems have been successfully solved. New types of a fast-acting external memory of great capacity with direct access have been created. New structural solutions have permitted the effective realization of high-level languages, the organization of work in various modes, including those in the modes of real time and the division of time, and have also provided an opportunity for organizing data banks for collective use at the level of an operation system.

In developing the complex the latest automated planning system fitted with a special program provision of several million commands in volume was used. The systemic mathematical provision of the Elbrus-2 complex is fully compatible with the previously announced 10-processor system of the Elbrus-1 that has a productivity for each processor of over 1 million operations a system. The Elbrus-2 computer complexes will be most effectively used in large-scale computing centers, in collective use networks and particularly in large systems for the computation and processing of communications with a ramified network of terminals and communication lines.

CSO: 5500

USSR

#### BRIEFS

MAGADAN TELEPHONE COMMUNICATIONS--A 4,000-number automatic telephone exchange has been put into operation in Magadan. There are currently 17 telephones for every 100 residents in the oblast capital, or just slightly less than in Moscow. The oblast is devoting much attention to developing telephone communications in the rural areas. Recently an automatic telephone exchange was put into operation in Markovo Village in Chukotka. Work is currently underway to expand 50-number automatic telephone exchanges in 20 villages in Kolyma and Chukotka. Automatic telephone exchanges have already been expanded on the Ayon Island and in Sireniki, Yanrakynnot and some other villages. Another 437 channels of rayonwide communications service have been made available to automatic telephone exchanges in the rural areas since the beginning of the 10th Five-Year Plan period. Residents of remote villages in Kolyma and Chukotka can now dial to Moscow, Vladivostok, Leningrad and Yakutiya. [Magadan Domestic Service in Russian 0745 GMT 2 Aug 78 OW]

KAZAKH TV TOWER CONSTRUCTION--One of the highest television towers in the country is being built on the southwest slopes of the Koktyube mountains in Kazakhstan. It is 360 meters high, and is to be completed in 1980. The construction design of the column is unique in the Soviet Union. The relay station will carry five color television programs. [Moscow Domestic Service in Russian 0001 GMT 15 Aug 78 LD]

CSO: 5500

## SEASAT-A TO AID IN SHIPPING, SEABED RESEARCH

Copenhagen BERLINGSKE TIDENDE in Danish 10 Jul 78 p 6

[Text] Northern lights and other celestial phenomena in the immediate vicinity of the earth will be investigated more accurately with a new European satellite, Geos 2, which is supposed to be launched from Cape Canaveral in Florida on Friday.

The idea of placing a satellite in the outer magnetosphere, 36,000 km from the earth, received broad support in 1969 when Professor Bernhard Peters from the Danish Space Research Institute had gathered colleagues from many countries for a conference at Lyngby Hotel.

Geos 2 will apparently stand still at a point over the earth's equator, 35,900 km out in space. But every 24 hours the satellite will actually complete an orbit 265,000 km long at a velocity of 11,060 km/h.

### Stumbled in the Start

The first satellite in the series, Geos 1, was launched from the United States on 20 April 1977, but stumbled in the launch. The second and the third stage in the Delta carrier rocket did not separate as planned. The trip therefore ended at a height of 12,000 km. It was completely impossible to reach the target 36,000 km out. Many speculations followed, and as the best emergency solution the people responsible chose to let Geos 1 slide into an elliptical orbit whose lowest point is 2050 km and whose highest point is 38,318 km above the earth. In this way the researchers have obtained some information. But not what they had hoped for.

After the launch at Cape Canaveral in Florida on Friday, the European Space Center in Darmstadt, West Germany, will take over the remote control of the last, complicated maneuvers which will bring Geos 2 into the completely correct orbit.

Space research is expensive. It requires big carrier rockets and many tons of fuel to place a small useful load outside the earth.

At the instant of launching, Geos 2 itself weighs 537 kg, but when its own little engine has burnt out, the weight will be down to 237 kg.

## Danish Attempts

In Odenwald near Darmstadt the European Space Administration (ESA) has a ground station which maintains contact with Geos 2 24 hours a day.

The satellite can transmit data every second corresponding to 10 tightly printed A4 sheets.

The electronics center has built part of the satellite's power supply, while the Space Research Institute participates in two scientific experiments with instruments they have built themselves.

"In cooperation with our Swedish colleagues in Kiruna we want to record the so-called curved path of the northern light particles from the sun to earth," Dr Axel Bahnsen tells BERLINGSKE. "It is a big complex of problems. We know that the magnetosphere has an enormous tail extended in the direction away from the sun. Speaking in pictures, it is blown away by the current of particles which is referred to as the solar wind. Some place or another in this manner we must assume that the atomic northern light particles penetrate the system and follow magnetic lines of force to the earth's poles. In the second experiment, which is being carried out in cooperation with the Dutch, English, and French, we will measure the radio noise, a broad spectrum of electric and magnetic disturbances or eddies in the earth's immediate vicinity. And it is acceptable to use the word vicinity in this connection. A few thousand kilometers is nothing on a cosmic scale.

## More Campaigns

"We cannot say right away whether the results from this basic research will be useful. But we have to map our world and its surroundings," says Dr Bahnsen. "And Geos 2 is, as far as I know, the only satellite in that orbit dedicated to pure research. All the others are commercial satellites, which carry TV transmissions, telephone conversations, and information for the service of navigation and weather services."

The Space Research Laboratory is also carrying out less lofty campaigns. A few days ago engineers I. B. Iversen, M. Mohl Madsen, and Alfred Hein went to Svalbard, also called Spitzbergen, where they will launch three gigantic balloons into the stratosphere. One thousand cubic meters of hydrogen lift 8-10 kg of instruments to a height of 35 km. And it is hoped that Geos 2 has started to send data down when the last balloon is going up. It should also be mentioned that the institute has instruments in a couple of Swedish rockets, which will be launched from the base in Kiruna.

## The Northern Cap

Denmark and Canada will in the fall start to receive data on Greenland and the rest of the Northern Cap from a recently launched American satellite, Seasat-A.



The satellite, which was placed in orbit from the Vandenberg base, can be considered as a precursor of a future surveillance system for assisting shipping, reconnaissance, and investigations, etc. As a special mission we can mention environmental control and recording of the hunt for oil and gas by industry out in the ocean, far from the coasts.

Scientists also say that there is one good thing which can now be said about radioactive precipitation from nuclear tests by the big powers in the time before an agreement was made to cease testing.

"With high sensitivity instruments we can trace the precipitation and use it to map ocean currents, water changes, and pollution," says Dr H. Gote Ostlund, researcher at the University of Miami.

8958

CSO: 5500

FINLAND

#### TV-TELEPHONE INFORMATION SYSTEM PASSES TEST

Helsinki HELSINGIN SANOMAT in Finnish 20 Jun 78 p 22

[Text] An experiment in an information service to supplement newspapers has been started in Helsinki.

The system is called Telset and it has been developed by the Helsinki Telephone Company, Oy Nokia Ab Electronics and Sanoma Osakeyhtio. By using the telephone network anyone can, with the help of the information system, receive the latest information on, for example, news events and the changing lists [sic].

Approximately 30 terminals, which are on the company premises and in the homes of the system experts, participate in the experiment of the Telset information system that started in Helsinki in June.

After the completion of the experiment next April, the plans on the future of the new information system will be finalized. It will then be decided whether Telset is here to stay.

Technically the system uses a small computer, the PDP 11/34 va- [sic] assembled by Nokia.

The user requests information by telephone from the contents displayed on his television screen by a remote control.

The objective of the Telset service is to create an information service which is as economical as possible. When the system is completed, a picture tube magazine with 80,000 pages can be offered to the user.

At this time, the computer located on the premises of Sanoma Osakeyhtio has only a few hundred pages stored in memory. Before the experiment is completed, news information will be expanded to approximately 10,000 pages. The capacity of the computer is 50,000 pages. These are divided into six topics; e.g., home magazine, home information, enterprise Telset, Swedish Telset and Telset guide.

For example, both the text and graphic symbols of the following can be shown on the television screen: the latest news, weather, sports results, movies, radio and television programs, schedules, lotto, exchange rates, statistics, indexes, prognoses and business news.

One or more television screen pictures are needed to cover one page of the telset magazine. The television screen is divided into 24 lines with each line having space for 40 characters. Seven colors are being used.

The numbered pages are selected according to the instructions shown on the television screen. Using a command key, the pages can be glanced at in an arbitrary order.

"The selection method is easy," claims project leader Pekka Jaakkola from Sanoma Osaakeyhtio. "Anyone who is able to use the telephone and television, will also be able to use Telset."

#### Equipment Still Expensive

"The extra equipment needed for watching Telset is fairly expensive at the present time, but as soon as it can be manufactured in larger quantities the prices will decline," says Jaakko Hannuksela, the director of planning from Sanoma Osaakeyhtio.

"In the light of England's experience, it has been estimated that the extra equipment needed in homes would perhaps cost approximately 500-1,000 marks."

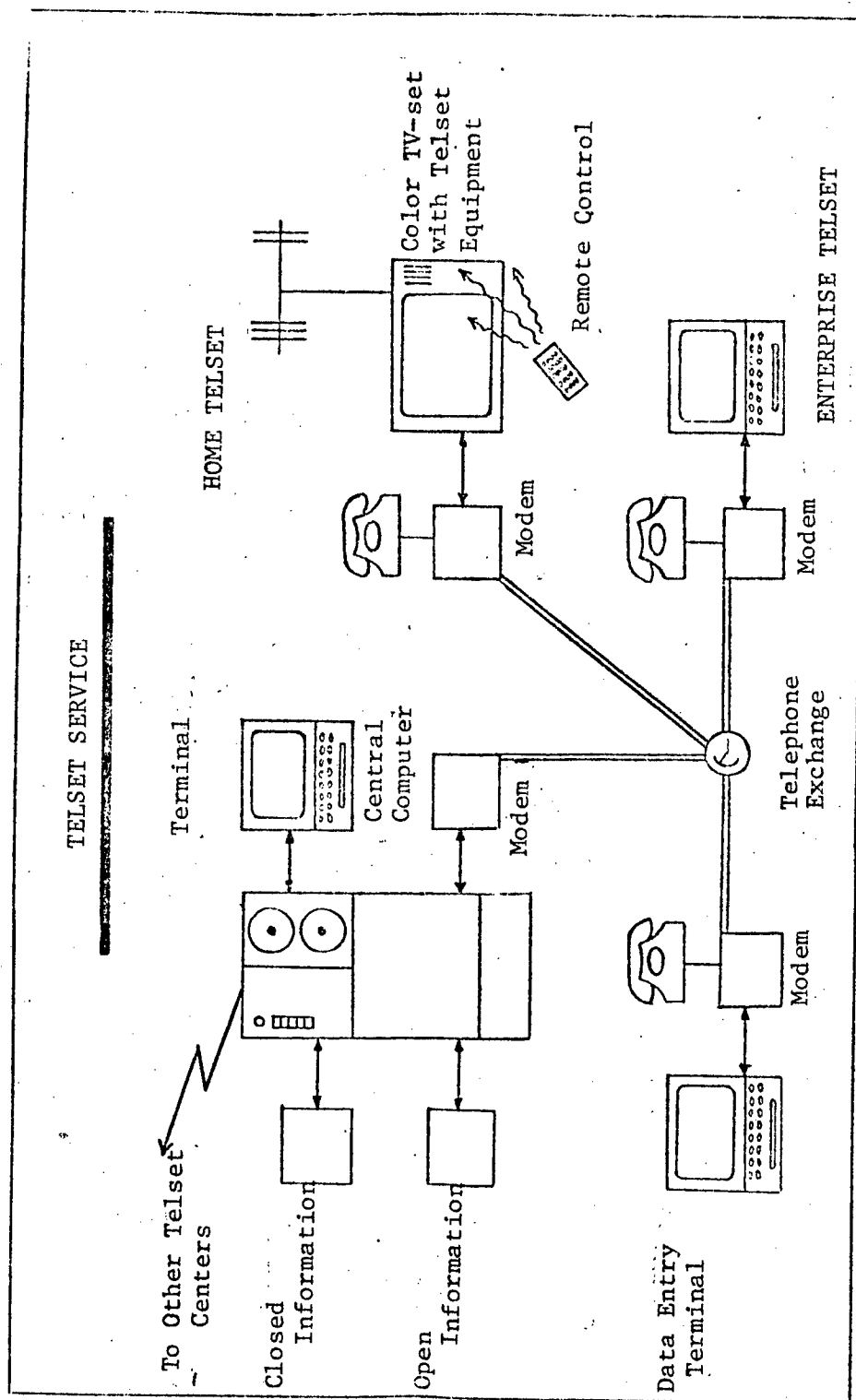
The home terminal used in the experiment is a regular color television set manufactured by Salora Oy and equipped with a Telset decoder and a modem. The set is always controlled by a remote control. Experiments are being made with a black and white terminal manufactured by Oy Nokia Ab Electronics and adapted for Telset.

The main equipment is connected with modems to the telephone network of the Helsinki Telephone Company.

The prototype of the system was already displayed in March last year and the domestic adaptation has been under development for 2 or 3 years. A picture information system like Telset is of British origin. The development of the principle was already started there at the beginning of the decade. At the beginning of June, an experiment with 1,500 users was launched in that island country.

The British postal service intends to spend 100 million pounds over 8 years in testing the system in London, Birmingham and Norwich.

Counselor of Mining Martti Harva from the Helsinki Telephone Company finds Telset to be justified, although there are already cable televisions, telephone information systems and other such devices. In Harva's opinion, telset satisfies needs other than they do.



20

"It can offer a tremendous amount of information directly from the computer according to the user's choice. Telset is comparable to an encyclopedia containing versatile classified information; in fact, it is an electronic handbook whose contents develop from day to day and moment to moment."

To the newspapers Telset means an experiment in an electronic distribution system; to the telephone company it means an additional use of the telephone network that was costly to build and to the electronics industry, it means a new achievement.

"Legally there is nothing to prevent the adoption of the new information system," says Jaakko Hannuksela. "The question is about an electronic version of a newspaper, a medium that can be connected to the telephone network."

9153

CSO: 5500

END